

REMARKS

The amendments and remarks presented herein are believed to be fully responsive to the Office Action.

Claims 1-16 and 33-54 are pending in the present application. Claims 5-7, 17-32, 42 and 46 have been canceled, claims 33-38 have been withdrawn and claims 1-4, 8, 12, 16, 39-41 and 47-49 have been amended. No new matter has been added. The independent claims recited by the present application are claims 1 and 39.

Examiner Interview Summary: Attorney (Changhoon Lee) for the Applicant conducted a telephonic interview with Examiner Randy Scott regarding the present application on May 27, 2009. The discussion between Examiner and Attorney focused on the claimed invention with proposed amendment and cited reference. Attorney presented that the claimed invention is patentably distinguishable over the U.S. Patent Publication No. 2004/0143672 invented by Padmanabham et al. Particularly, Attorney presented that Padmanabham discloses neither the combined sequential and parallel streaming nor the automatic redistribution function of the claimed invention.

The following are remarks were presented to the Examiner in draft form prior the interview:

OBJECTIONS

The Office Action states that the specification is objected to because of several informalities. Applicant respectfully amends the specification herein to correct the informalities in accordance with the Examiner's suggestions.

The Office Action further states that claims 1, 6, 7, 39, 47 and 48 are objected to because of several informalities. Applicant respectfully amends those claims herein to correct the informalities in accordance with the Examiner's suggestions.

CLAIM REJECTIONS

A. Claim Rejections under 35 U.S.C. § 102

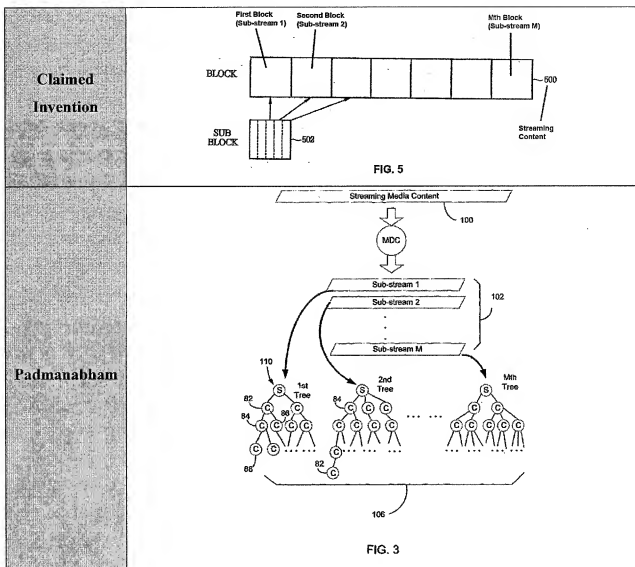
(1) The standard for anticipation, or lack of novelty under 35 U.S.C. §102, is one of strict identity to anticipate a claim for a patent and therefore render it invalid, a single prior source must contain all its essential elements. See, e.g., Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367 (Fed. Cir. 1986). It is well settled law that anticipation is established **only if all the elements of an invention**, as stated in a patent claim, **are identically set forth in a single prior art reference**. See e.g. Trintec Industries, Inc. v. Top-U.S.A. Corp., 295 F.3d 1292 (Fed. Cir. 2002).

(2) The Office Action states that claims 1-7, 9, 14-16, 39-42, 46-48, 50 and 52-54 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Publication No. 2004/0143672 invented by Padmanabham et al. (hereinafter “Padmanabham”).

Claims 1 and 39

(3) Before addressing the prior art, it may be helpful to elaborate on certain features of the present invention. In this way when comparing the claim language to the prior art, one can more readily perceive the deficiencies of the prior art when compared to the invention as defined in the claims. The claimed invention is directed to a combined sequential and parallel download method of steaming content with automatic redistribution function. In reference to FIG. 5 below, reproduced for the Examiner's convenience with annotation, the claimed invention divides steaming content into multiple blocks (e.g. M Blocks) for sequential streaming which are then divided into a plurality of sub blocks for parallel streaming. While the claimed method downloads said multiple blocks of the steaming content in a sequential order, downloading operations of the sub blocks are carried out in parallel from multiple nodes. Upon receipt of a request from a user client to each node having established connection, said each node transmits the respective sub blocks to the user client in parallel. When download of all sub blocks included in the first block is completed, the claimed method starts downloading sub blocks of the second block upon receipt of a request from the user client to said nodes.

If a bad connection is monitored, the claimed method would redistribute the sub block of bad connection to other available node for download.



(4) Whereas, referring to Fig. 3, Padmanabham teaches a method of distributing steaming content to multiple nodes for parallel downloading by using multiple distribution trees. Unlike the combined serial and parallel transmission of the claimed invention, Padmanabham discloses parallel transmission wherein the method divides the entire streaming content into multiple sub-streams, and each sub-stream is delivered over a corresponding distribution tree for parallel transmission. Para. [0026] of Padmanabham also recites as follows: "in conjunction with the division of the content into multiple sub-streams, the server sets up a plurality of distinct and diverse distribution trees 106 each for distributing one of the sub-streams." However, claim 1

recites limitations (b) and (f) as follows: (b) dividing a first block of streaming data into a plurality of sub blocks; ... (f) wherein the step of sending a request, the step of monitoring download state and the step of redistributing said sub blocks are repeated for downloading sub blocks included in a second block when download of all sub blocks included in the first block is completed.

(5) The claimed invention monitors download state of the established connections and redistributes any sub blocks of failed connection or bad connection to other node having a good connection so that the user client never loses any steaming data. Whereas, a user client in Padmanabham would lose a sub-stream of streaming data if a node fails. Para. [0027] and [0040] of Padmanabham also recites such loss as follows: "if the client 82 fails, the client 84 will lose the first sub-stream, but not the second sub-stream. ... When a node fails, the packet loss experienced by its descendant nodes is 100%." Further, referring to Fig. 7 below, the Padmanabham system would not reconfigure the failed distribution tree until a parent node experiences a packet loss problem as recited in para. [0040] and Fig. 7 of Padmanabham as below. As such, Padmanabham discloses neither the combined sequential and parallel streaming nor the automatic redistribution function of the claimed invention.

[0040] ... Referring to FIG. 7, each client monitors the packet loss rate it is experiencing in each of the distribution trees (step 170). When a node finds that the packet loss rate for a given distribution tree reaches an unacceptable level (step 172), it notifies its parent node in that tree to see whether the parent node is having the same problem (step 174). If so, the source of the problem (e.g., network congestion, node failure, etc.) is upstream of the parent, and the child node leaves it to the parent node to deal with the problem. In this regard, the child node may set a sufficiently long time-out period (step 176), and takes actions on its own if the parent node cannot resolve the problem within the time-out period (step 178). If however, the parent node is not experiencing the same problem or does not respond to the inquiry of the child node, the child node contacts the server (step 180). In response, the server executes a fresh join operation (step 182) as described above to find a new parent node in the distribution tree for this node (and its subtree).

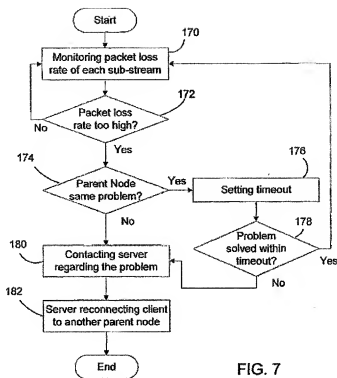


FIG. 7

Claims 2-4, 7, 9, 14-16, 40-42, 46-48, 50 and 52-54

(6) The Office Action rejected claims 2-4, 7, 9, 14-16, 40-42, 46-48, 50 and 52-54 which depend from claims 1 and 39 respectively, as being anticipated by Padmanabham. Thus, the above remarks for claims 1 and 39 are equally applicable to the dependent claims 2-4, 7, 9, 14-16, 40-42, 46-48, 50 and 52-54. Since claims 5-7, 42 and 46 are cancelled, the rejections thereof are moot.

(7) As to amended claims 3 and 47, the claimed invention monitors completion of download (download state) for each of said connected nodes and redistributes sub blocks from a first node to a second node when download is completed at the second node. Whereas, Padmanabham only teaches redistribution upon notification of a parent node's failure¹ from said parent node. Padmanabham does not redistribute assigned sub-stream to other distribution tree when said other distribution tree completes downloading operation of its own assigned sub-

¹ According to Padmanabham, the failure only includes a computer crash, being turned off, or becoming disconnected from the network or any other disconnection. See para. [0040].

stream. As such, claims 2-4, 9, 14-16, 40-41, 47-48, 50 and 52-54 are clearly allowable over the cited prior art.

B. Claim Rejections under 35 U.S.C. § 103(a)

Obviousness - A finding of obviousness must be based on four underlying factual determinations:

- (1) The scope and content of the prior art;
- (2) The differences between the prior art and the claimed invention;
- (3) The level of ordinary skill in the art; and
- (4) Objective considerations of non-obviousness such as commercial success, long felt but unmet need, failure of others to make the invention, and the like. *See, Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966). Failure to make these determinations precludes the making of a prima facie case of obviousness.

(1) The Federal Circuit following the Supreme Court's decision in *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 127 S.Ct. 1727 held that "[An] impermissible "obvious to try" situations occurs where what was 'obvious to try' was to explore a new technology or general approach that seemed to be a promising field of experimentation, where the prior art gave only general guidance as to the particular form of the claimed invention or how to achieve it. ... *KSR* affirmed the logical inverse of this statement by stating that § 103 bars patentability unless "the improvement is more than the predictable use of prior art elements according to their established functions." *In re Kubin*, 2009 WL 877646, 8 (Fed. Cir. 2009). The Federal Circuit also following the Supreme Court's decision in *KSR* held that "the test for obviousness is not whether or not it would have been obvious to try to make the invention, but rather whether or not the inconvenience [sic] would have been obvious to a person of ordinary skill in the inventor's field at the time the invention was made." *Rentrop v. Spectranetics Corp.*, 550 F.3d 1112, 1118 (Fed. Cir. 2008). In other words, **the test for obviousness is whether a person skilled in the art would have solved a known problem by obvious methods, not whether it would be obvious to try to solve the problem that the invention solves.**

Claims 8 and 49

(2) The Office Action states that claim 8 and 49 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Padmanabham in view of Jenkins (US 6,028,608)(hereinafter

"Jenkins"), further in view of Arye ("Arye"). Applicant respectfully traverses these rejections as explained below.

(3) Padmanabham fails to disclose the limitations recited in the independent claims 1 and 39 of the present application, as discussed above, and Jenkins and Arye still fail to remedy the deficiencies of Padmanabham in reaching all the elements and limitations of the claims of the present invention.

(4) The Office Action admits that Padmanabham does not specifically teach determining if redistribution of sub blocks is necessary; and determining download speed of the connection where the sub block download is completed and the connection of which the download rate is the lowest. However, the Office Action further states that Jenkins discloses the general concepts of: determining if redistribution of sub blocks is necessary, for example, in reference to col. 43, lines 22-25 of Jenkins. However, a prior art reference must be considered in its entirety, i.e., as a whole. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). One cannot take phrases out of context to support its contention.

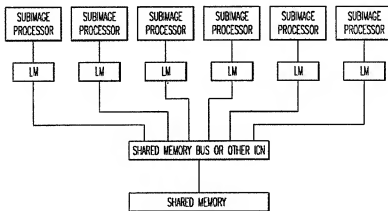


FIG. 18B

(5) In reference to Fig. 18B of Jenkins, Jenkins discloses a number of efficient image-parallel multiprocessor implementations wherein each subimage processor is assigned to generate the image information for one or more sub-images. The Jenkins system classifies to which sub-images each sample belongs, and using this classification, determines if the sample needs to be redistributed to other processors rendering other subimages. The distribution or redistribution of subimage in Jenkins is performed not for transmitting streaming data but for

parallel multiprocessor implementations. To that extent, Jenkins does not teach the concept of redistribution of sub blocks recited in the instant claim.

(6) One may argue that the combination of such elements was 'obvious to try'." The Federal Circuit following the Supreme Court's decision on *KSR Intern. Co. v. Teleflex Inc.* held that "[An] impermissible "obvious to try" situations occurs where what was 'obvious to try' was to explore a new technology or general approach that seemed to be a promising field of experimentation, where the prior art gave only general guidance as to the particular form of the claimed invention or how to achieve it. ... *KSR* affirmed the logical inverse of this statement by stating that § 103 bars patentability unless "the improvement is more than the predictable use of prior art elements according to their established functions." *In re Kubin*, 2009 WL 877646, 8 (Fed. Cir. 2009). Jenkins gave only general guidance (i.e. "redistribution" related to multiprocessor implementations) as to the particular form of the claimed invention or how to achieve it. As such, the combination of the claimed elements was not obvious to try from the cited prior art references.

(7) The Office Action admits that Padmanabham and Jenkins do not specifically teach determining download speed of the connection where the sub block download is completed and the connection of which the download rate is the lowest. However, the Office Action further states that Arye discloses the general concepts of: determining download speed of the connection where the sub block download is completed and the connection of which the download rate is the lowest, for example, in reference to para. [0057] of Arye.

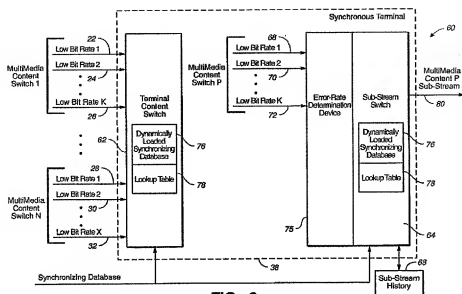


FIG. 3

(8) Arye discloses a multicasting system for reception of multimedia information. In reference to Fig. 3 above, the multicasting system comprises a content switch coupled to a multimedia content source and at least one multimedia smart terminal. Each multimedia content is supported by a primary multimedia stream transmitted over a primary dedicated channel having a primary bandwidth. At least one multimedia smart terminal is configured to receive from the content switch over a network each multimedia content as a secondary multimedia stream transmitted over a secondary channel having a secondary bandwidth. The content switch includes a bandwidth scaler configured to scale each primary multimedia stream to a plurality of secondary multimedia sub-streams that are substantially synchronized. The multimedia smart terminal includes a smart terminal sub-stream switch configured to switch among the plurality of secondary multimedia sub-streams in order to select a substantially optimum secondary multimedia sub-stream. The substantially optimum secondary multimedia sub-stream includes a substantially optimum relationship between an error rate level determined at the time of reception of a multimedia content and the quality of reception of a multimedia content. Neither Padmanabham nor Jenkins nor Arye nor their combination teaches or suggest all the elements and limitations of claims 8 and 49. Therefore, claims 8 and 49 are now in condition for allowance.

Claims 10-12 and 43-45

(9) The Office Action states that claims 10-12 and 43-45 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Padmanabham in view of Griffiths (US 6,0148,698) (hereinafter "Griffiths"). Applicant respectfully traverses these rejections as explained below.

(10) Padmanabham fails to disclose the limitations recited in the independent claims 1 and 39 of the present application, as discussed above, and Griffiths still fails to remedy the deficiencies of Padmanabham in reaching all the elements and limitations of the claims of the present invention.

(11) The Office Action admits that Padmanabham does not specifically teach the steps of wherein the sub blocks to be downloaded from each of the nodes are determined using the node state information. However, the Office Action further states that Griffiths discloses the general concepts of: wherein the sub blocks to be downloaded from each of the nodes are determined using the node state information, for example, in reference to col. 21, lines 34-45 of Griffiths.

(12) Griffiths discloses a system for the storage, management, and delivery of advertising information displayed on terminals connected to the computer network. In reference to col. 21-col. 22, Griffiths teaches use of mirror information servers, which allows for banners to be distributed faster to user terminals. For example, mirror information servers which preferably contain a duplicate of the banners stored on a primary information server. Use of mirror servers to store and send duplicate advertising information in Griffiths does not teach the claimed parallel transmission of divided sub blocks of streaming content by using the node state information. Neither Padmanabham nor Griffiths nor their combination teaches or suggest all the elements and limitations of claims 10-12 and 43-45. Therefore, claims 10-12 and 43-45 are now in condition for allowance.

Claims 13 and 51

(13) The Office Action states that claims 13 and 51 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Padmanabham in view of Liva et al. (US 2002/0136203)(hereinafter "Liva"). Applicant respectfully traverses these rejections as explained below.

(14) Padmanabham fails to disclose the limitations recited in the independent claims 1 and 39 of the present application, as discussed above, and Liva still fails to remedy the

deficiencies of Padmanabham in reaching all the elements and limitations of the claims of the present invention.

(15) The Office Action admits that Padmanabham does not specifically teach the step of determining download error using checksum value of downloaded sub blocks. However, the Office Action further states that Liva discloses the general concepts of: determining download error using checksum value of downloaded sub blocks, in reference to para. [0087] of Liva. Neither Padmanabham nor Liva nor their combination teaches or suggest all the elements and limitations of claims 10-12 and 43-45. Therefore, claims 10-12 and 43-45 are now in condition for allowance.

If any issue regarding the allowability of any of the pending claims in the present application could be readily resolved, or if other action could be taken to further advance this application such as an Examiner's amendment, or if the Examiner should have any questions regarding the present amendment, it is respectfully requested that the Examiner please telephone Applicant's undersigned attorney in this regard.

Respectfully submitted,

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